# Impacting Acquisition:

Using "Bridge Cards" to ensure that the Right questions are asked by senior management

Human Centered Systems Engineering Group

NAVSEA Dahlgren, Virginia, USA





### Acknowledgements

(Who REALLY did the work here?)

- Member, USN (Ret.), BCI Inc.
- Variety of SMEs, HFEs, SEs
- Member, BCI Inc.

## Change Begins at the Top

Human Factors Engineers don't make the final decisions

Must influence Leadership to fly the Human Factors Flag

Make alliances with friendly natives

Demonstrate corporate advantages

Institutionalize process



### **US Success Stories**



- PEO (Strike)
  - ◆ Former PEO (DD 21) RADM Carnavale
  - Now RADM Hamilton



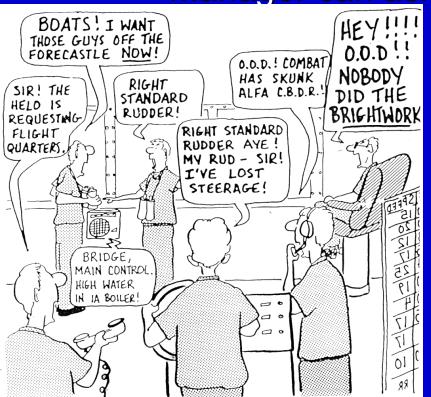
- PEO (Theater Surface Combatants)
  - RADM Member
    - Also Chief Engineer for the Assistant Secretary of the Navy for Research, Development, and Acquisition (ASN-RDA CHENG)
  - ◆ RADM Member, USN (Ret.)

## **Bridge Card**

A quick reference for commanding officers

Adopted Name for Top Ten Questions a Program

Manager can ask







### Bridge Card

#### General:

- 1) How did you [will you] come up with the function allocation between the hardware/software (equipment/computer program) aspects of the system and the human operator?
- 2) How are you [will you] ensuring that all of the information is available to the decision-maker without burying him in data?
- 3a) Has this concept been presented to a fleet review team and if so what was their reaction?
- 3b) Where will you be setting up your prototype watchstations for human factors testing? Will it be readily accessible to the fleet reviewers and test participants?
- 4) What are the qualifications of your human factors team? When did they start working on this, and what impact have they had on your designs?
- 5) What additional training will be required for operators and maintainers for this system?



#### Specific:

- 1) What analyses have you performed to ensure that these operators can really handle the workload your design will be placing on them?
- 2) What will the operator have to memorize to use this?
- 3) How do you handle operator error? It WILL happen.
- 4) Are these controls standardized with other systems used by the same operators?
- 5) Have you considered operator complaints with previous similar systems in this design, e.g., AEGIS Lessons Learned Program?

### **Acquisition Questions**

- Bridge Card Concept Extended to Include Review of Acquisition Process
- Applicable questions for each Milestone
  - ◆ HF folded into other disciplines

## Example of Bridge Card Question Applicability in System Acquisition

Program Information	Statutory	Regulatory DoD 5000.2-R	0	I	П	Ш	Prepared by	Approved*	Mandatory Format	Questions
Acquisition Decision Memorandum (ADM)		Part 5.2.1	X	X	X	X	DAB Exec. Secretary	MDA*	No	
Acquisition Program Baseline (APB)	10 USC 2435	Part 3.2.2		X	X	X	PM Component	MDA*	Yes	
Acquisition Strategy (AS)	Multiple	Part 3.3.		X	X	X	PM Component	MDA*	No	0-21; I-3, 4, 5

### Does it Work?

- Bridge Cards delivered in February
- Mad scramble commenced in March
- Three programs have contacted NAVSEA Dahlgren Human Factors directly thus far
- Program leadership (PEO TSC) asking the "right questions" at program reviews

### Conclusion

- Change Begins at the Top
- Leadership Buy-in is Vital
- Get them Worried about Human Factors Issues
- Provide Quick, Usable Solutions (Bridge Cards)
- Know Your Acquisition/SE Process

#### **EVERY Solution is Different**

VP, BCI Inc. 16347 Dahlgren Road Dahlgren, Va 22448 Tel: 540-663-3321

Fax: 540-663-3307

NAVSEA Dahlgren/ Code G53 17320 Dahlgren Rd. Dahlgren, VA 22448-5100

Tel: 540-653-8097 Fax: 540-653-7440